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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/976,285	10/15/2001	Eliel Louzoun	P-4101-US	1347
27130	7590	05/19/2005	EXAMINER	
EITAN, PEARL, LATZER & COHEN ZEDEK LLP 10 ROCKEFELLER PLAZA, SUITE 1001 NEW YORK, NY 10020			STEELMAN, MARY J	
			ART UNIT	PAPER NUMBER

2191

DATE MAILED: 05/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/976,285

Applicant(s)

LOUZOUN ET AL

Examiner

Mary J. Steelman

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-19 and 21-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-8, 10-19 and 21-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to Amendments and Remarks received 27 December 2004. Per Applicant's request, claims 9 and 20 have been cancelled, claims 1, 10-12, 16-19, and 25-26 have been amended, and claims 29-30 have been added. Claims 1-8, 10-19, and 21-30 are pending.

Claim Objections

2. In view of the amendment to claim 25, the prior claim objection is hereby withdrawn.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3-8, 10, 11, 26, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,003,591 to Kauffman et al., in view of US Patent 6,615,405 B1 to Goldman et al.

Per claim 1:

A method comprising:

Kauffman disclosed:

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Col. 13, line 33, "...method..."

-managing downloading of at least two firmware functions, which are accessible

by more than one driver, with one processor;

Kauffman disclosed:

Col. 2, lines 46-53, "The converter includes means for receiving firmware downloaded over a cable television network...", col. 13, lines 42-45, "A multiplicity of firmware packages (at least two firmware functions) may be carried on a single system, with different terminals (accessible by more than one driver) in the system accepting and executing different packages as specified by the system headend."

Kauffman failed to disclose:

-verifying for said at least one of said drivers if said firmware has been downloaded by another function.

However, Goldman disclosed (col. 5, lines 17-19), "determine if the file exists in its file-store...returns true if the file exists...", (col. 6, lines 26-32), "it is very common...to share files...some of the files which the parent associated with the first Application will likely be already present...and will not need to be duplicated.", (col. 7, lines 66-67), "A further advantage results from avoiding the installation of duplicate components on targeted devices...", (col. 8, lines 39-41), "present invention enables cross referencing of duplicate or overlapping application components..." Thus Goldman discloses that if two applications reference an identical component, duplication can be avoided by sharing, thus firmware previously downloaded is verified.

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Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify Kauffman's invention, which (Kauffman: Col. 2, lines 25-29) enables downloading firmware to allows modification of functions by the system operator, by including features that Goldman disclosed because (Goldman: Col. 2, lines 29-36) Goldman recognized that scalability, including effortless maintenance and distribution of software, allows a system to meet increased demands, thereby providing a better, longer lasting system to the user.

Per claim 3:

-said managing comprises downloading at least two said firmware functions with a single download.

Kauffman: Col. 2, lines 44-53, "...converter with remotely modifiable functionality is provided...means for receiving firmware downloaded...to provide one or more converter functions dictated by the firmware...", col. 6, line 66-col. 7, line 5, "...a plurality of different firmware packages are broadcast on the secondary channel, each package providing different converter functions or combinations of functions..."

Per claim 4:

said managing comprises managing downloading of firmware common to at least two of said drivers.

Kauffman: Col. 3, lines 18-25, "...firmware can implement a communication protocol for the converter, a descrambling technique...an on-screen display..."

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Per claim 5:

-wherein said managing comprises managing downloading of firmware by more than one access operation of the same driver.

Kauffman: Col. 3, lines 41-45, "Means are provided for transmitting addressable converter data on a first data channel...on a second channel...", col. 4, line 17-21, "...remotely modifiable user terminal is provided which comprises means for receiving a plurality of...transmitted firmware segments..."

Per claim 6:

-for at least one of said drivers, implementing a functionality common to another of said drivers.

Kauffman: Col. 3, lines 11-24, "The downloaded firmware received and stored by the converter can implement a functional layout on a keyboard associated with the converter..."

Per claim 7:

-for at least one of said drivers, implementing a different functionality than another of said drivers.

Kauffman: Col. 5, line 66 -col. 6, line 7, "...different firmware packages downloaded by headend to converter may provide different converter functions..."

Per claim 8:

-initializing at least one of said drivers with information to determine a desired firmware sufficient to implement a desired functionality.

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Kauffman: Col. 7, lines 29-41, "...assign (determine a desired firmware sufficient to implement a desired functionality) a new firmware package to a particular converter, addressable controller is commanded to transmit instructions to the converter. The instructions are received..."

Per claim 10:

Kauffman failed to disclose:

-checking at least one of a register and a bit accessible by said at least two functions if said desired firmware has been downloaded by another function.

However Goldman disclosed (col. 5, lines 9-28), "For each file associated with an application...a checksum is calculated...also reads the file size, date and time stamp...using database manager to determine if the file exists in its file-store. The repository server returns true if the file exists and its checksum, file size, date and time stamp match...precisely...If the file exists, processing is complete...If the file does not exist, the repository server returns false..." Thus values are calculated (presumably in a register) and true or false is returned depending on whether a file (firmware) has already been downloaded.

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify Kauffman's invention regarding functionally modifiable firmware, to include specific details as provided by Goldman, because both inventions reference updates, Goldman merely provides more details that are required to ensure correct replacement of code, yet limiting unnecessary transmissions in the case where shared code is already present.

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Per claim 11:

Kauffman failed to disclose:

-if said firmware has not been downloaded by another function then downloading said firmware for said at least one of said drivers.

However Goldman disclosed (col. 5, lines 9-37), "For each file associated with an application...a checksum is calculated...also reads the file size, date and time stamp...using database manager to determine if the file exists in its file-store....If the file does not exist, the repository server returns false and the transmitting console transmits to the repository server, the new file..."

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify Kauffman's invention regarding functionally modifiable firmware, to include specific details as provided by Goldman, because both inventions reference updates, Goldman merely provides more details that are required to ensure correct replacement of code, yet limiting unnecessary transmissions in the case where shared code is already present.

Per clam 26:

A system comprising:

- a multi-function device that comprises at least two firmware functions that are accessibly by more than one driver;
- a processor adapted to manage downloading of said at least two firmware functions...
- and to verify for said at least one of said drivers if said firmware has been downloaded by another function;
- a memory in communication with said processor.

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(See limitations addressed in claim 1 above.)

Per claim 28:

-said processor is adapted to download at least two said firmware functions with a single download.

(See limitations addressed in claim 3 above.)

5. Claims 2, 19, 21-25, 27, and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,003,591 to Kauffman et al., in view of US Patent 6,615,405 B1 to Goldman et al., and further in view of US Patent 5,539,896 to Lisle.

Per claim 2:

-said managing comprises reducing a risk or at least one of said drivers overwriting firmware that has been downloaded and is being used by another of said drivers.

Kauffman suggested verification, (col. 2, lines 49-50), "Means are provided for verifying the integrity of the firmware...", col. 2, line 53-59, "...means for storing default operation software...", col. 4, lines 36-49, "...The verifying means can operate by testing a checksum..."

Kauffman failed to explicitly refer to reducing the risk of overwriting. Goldman addressed 'overwriting' at col. 8, lines 28-30, but failed to prevent it, only to recover from it. However, Lisle disclosed a technique using dual buffers and pointers to avoid overwriting code. Col. 9, lines 38-40, describe "both the host CPU and DSP may be simultaneously executing code and accessing common shared memory..." Col. 10, lines 20-23, "this current pointer...is serving the

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function of informing the host CPU not to write code into the left buffer since the DSP is still executing this code...” Thus, Lisle provides a technique to reduce the risk of a driver overwriting code that is being executed by another driver (shared memory).

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to further modify the Kauffman / Goldman combination using the Lisle invention because Lisle recognized that (Lisle: col. 1, lines 40-41) “it may be desirable to reconfigure the system in real time”, (Lisle: col. 2, lines 17-19) “it is necessary to periodically load other code from the host into this shared memory for execution by the DSPP, (Lisle: col. 2, lines 24-26), “so as to avoid the host attempting to update the buffer of such a shared memory while code in the buffer was being executed by the DSP. Therefore updating code in a shared memory, while ensuring that code being executed by another driver is not overwritten, allows (Goldman: Col. 2, lines 29-36) Goldman recognized that scalability, including effortless maintenance and distribution of software, allows a system to meet increased demands, thereby providing a better, longer lasting system to the user.

Per claim 19:

- a multi-function device that comprises at least two firmware functions which are accessible by more than one driver;
- a processor adapted to manage downloading of said at least two firmware functions.
- to reduce a risk of at least one of said drivers overwriting firmware that has been downloaded and is being used by another of said drivers.

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(Limitations of claim 19 have been addressed in claims 1 and 2 above.)

Per claim 21:

-processor is adapted to download at least two said firmware functions with a single download.

(See limitations addressed in claim 3 above.)

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to further modify the Kauffman / Goldman combination using the Lisle invention because Lisle recognized that (Lisle: col. 1, lines 40-41) “it may be desirable to reconfigure the system in real time”, (Lisle: col. 2, lines 17-19) “it is necessary to periodically load other code from the host into this shared memory for execution by the DSPP, (Lisle: col. 2, lines 24-26), “so as to avoid the host attempting to update the buffer of such a shared memory while code in the buffer was being executed by the DSP. Therefore updating code (download firmware) in a shared memory, while ensuring that code being executed by another driver is not overwritten, allows (Goldman: Col. 2, lines 29-36) Goldman recognized that scalability, including effortless maintenance and distribution of software, allows a system to meet increased demands, thereby providing a better, longer lasting system to the user.

Per claim 22:

-processor is adapted to manage downloading of firmware common to at least two of said drivers.

(See limitations addressed in claim 4 above.)

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Per claim 23:

-at least one of said drivers is adapted to implement a functionality common to another of said drivers.

(See limitations addressed in claim 6 above.)

Per claim 24:

-at least one of said drivers is adapted to implement a different functionality than another of said drivers.

(See limitations addressed in claim 7 above.)

Per claim 25:

-at least one of said drivers is initialized with information to determine a desired firmware sufficient to implement a desired functionality.

(See limitations addressed in claim 8 above.)

Per claim 27:

-said processor is adapted to reduce a risk of at least one of said drivers overwriting firmware that has been downloaded and is being used by another of said drivers.

(See limitations addressed in claim 2 above.)

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Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to further modify the Kauffman / Goldman combination using the Lisle invention because Lisle recognized that (Lisle: col. 1, lines 40-41) “it may be desirable to reconfigure the system in real time”, (Lisle: col. 2, lines 17-19) “it is necessary to periodically load other code from the host into this shared memory for execution by the DSPP, (Lisle: col. 2, lines 24-26), “so as to avoid the host attempting to update the buffer of such a shared memory while code in the buffer was being executed (reduce risk) by the DSP. Therefore updating code (download firmware) in a shared memory, while ensuring that code being executed by another driver is not overwritten, allows (Goldman: Col. 2, lines 29-36) Goldman recognized that scalability, including effortless maintenance and distribution of software, allows a system to meet increased demands, thereby providing a better, longer lasting system to the user.

Per claim 29:

A method comprising:

-managing downloading of at least two firmware functions, which are accessible by more than one driver, with one processor;

(See rejection of limitation in claim 1 above.)

-and reducing a risk of at least one of said drivers overwriting firmware that has been downloaded and is being used by another of said drivers.

(See rejection of limitation in claim 2 above.)

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Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to further modify the Kauffman / Goldman combination using the Lisle invention because Lisle recognized that (Lisle: col. 1, lines 40-41) "it may be desirable to reconfigure the system in real time", (Lisle: col. 2, lines 17-19) "it is necessary to periodically load other code from the host into this shared memory for execution by the DSPP, (Lisle: col. 2, lines 24-26), "so as to avoid the host attempting to update the buffer of such a shared memory while code in the buffer was being executed (reduce risk) by the DSP. Therefore updating code (download firmware) in a shared memory, while ensuring that code being executed by another driver is not overwritten, allows (Goldman: Col. 2, lines 29-36) Goldman recognized that scalability, including effortless maintenance and distribution of software, allows a system to meet increased demands, thereby providing a better, longer lasting system to the user.

Per claim 30:

-verifying for a driver if said firmware has been downloaded by another function.

(See limitation addressed in claim 1 above.)

6. Claims 12-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,003,591 to Kauffman et al., in view of US Patent 6,615,405 B1 to Goldman et al., and further in view of US PreGrant Publication 2002/0166061 A1 to Falik et al.

Per claim 12:

Kauffman / Goldman failed to disclose:

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-locking access to said firmware by drivers other than said at least one of said drivers.

However Falik disclosed: [0114] Shared Memory Host Semaphore Resister is used to control reads / writes.

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify the Kauffman / Goldman invention regarding functionally modifiable firmware, to include specific details as provided by Falik regarding access controls through semaphore locks, because both inventions reference firmware updates, Falik merely provides more details that are required to ensure correct replacement of code when thereby enabling [0003] updates, bug fixes, and storage of critical changing parameters” via an enabling reprogramming.

Per claim 13:

Kauffman / Goldman failed to disclose:

-said locking access comprises memory spin locking.

However Falik disclosed: [0114] Shared Memory Host Semaphore Resister is used to control reads / writes.

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify the Kauffman / Goldman invention regarding functionally modifiable firmware, to include specific details as provided by Falik regarding access controls through semaphore locks (spin locking), because both inventions reference firmware updates, Falik merely provides more details that are required to ensure correct replacement of code when

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thereby enabling [0003] updates, bug fixes, and storage of critical changing parameters” via an enabling reprogramming.

Per claim 14:

Kauffman / Goldman failed to disclose:

-said locking access comprises PCI (peripheral component interface) bus locking on a memory location of said at least one of said drivers.

However Falik disclosed: [0114] Shared Memory Host Semaphore Resister is used to control reads / writes.

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify the Kauffman / Goldman invention regarding functionally modifiable firmware, to include specific details as provided by Falik regarding access controls through locks, because both inventions reference firmware updates, Falik merely provides more details that are required to ensure correct replacement of code when thereby enabling [0003] updates, bug fixes, and storage of critical changing parameters” via an enabling reprogramming.

Per claim 15:

Kauffman / Goldman failed to disclose:

-locking access comprises locking a device memory register.

However Falik disclosed: [0114] Shared Memory Host Semaphore Resister is used to control reads / writes.

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Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify the Kauffman / Goldman invention regarding functionally modifiable firmware, to include specific details as provided by Falik regarding access controls through locks, because both inventions reference firmware updates, Falik merely provides more details that are required to ensure correct replacement of code when thereby enabling [0003] updates, bug fixes, and storage of critical changing parameters” via an enabling reprogramming.

Per claim 16:

Kauffman / Goldman failed to disclose:

-setting a register that said downloading said firmware is finished.

However Falik disclosed: FIG. 9 & [0120], “...When Host completes transmission of the ‘Update Data’..., [0122], “...If a ‘valid’ indication is received...the procedure proceeds...where the update is actually performed...when the update is complete...”

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify the Kauffman / Goldman invention regarding functionally modifiable firmware, to include specific details as provided by Falik regarding access controls, registers, and bit flags to indicate completion, because both inventions reference firmware updates, Falik merely provides more details that are required to ensure correct replacement of code when thereby enabling [0003] updates, bug fixes, and storage of critical changing parameters” via an enabling reprogramming.

Per claim 17:

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Kauffman / Goldman failed to disclose:

-implementing said firmware.

However Falik disclosed: [0122], "...Performing a soft reset...that re-initializes both EC and Host completes the operation."

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify the Kauffman / Goldman invention regarding functionally modifiable firmware, to include specific details as provided by Falik regarding updating and implementing firmware after a verification process, because both inventions reference firmware updates, Falik merely provides more details that are required to ensure correct replacement of code when thereby enabling [0003] updates, bug fixes, and storage of critical changing parameters" via an enabling reprogramming.

Per claim 18:

Kauffman / Goldman failed to disclose:

-permitting access to said firmware by drivers other than said at least one of said drivers.

However Falik disclosed: FIG. 8, #837, Normal Operation, After update is successfully validated access is granted to drivers for normal processing after a reset or re-boot operation.

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify the Kauffman / Goldman invention regarding functionally modifiable firmware, to include specific details as provided by Falik regarding access controls to downloaded firmware update, because both inventions reference firmware updates, Falik merely provides more details that are required to ensure correct replacement of code when thereby

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enabling [0003] updates, bug fixes, and storage of critical changing parameters” via an enabling reprogramming. After completion of a satisfactory update, the program may follow normal processing. Multiple drivers may access shared memory.

Response to Arguments

7. Applicant has argued, in substance, the following:

(A) As Applicant has pointed out on page 2 of Remarks, 6th paragraph, in reference to claim 19, “Kaufman does not include reducing the risk that a driver overwrites firmware.”

Examiner’s Response: Independent claims have been amended to include additional limitations.

New art has been combined to overcome the rejection. See rejection of claim 2 and 19 above.

Lisle disclosed a technique using dual buffers and pointers to avoid overwriting code. Col. 9, lines 38-40, describe “both the host CPU and DSP may be simultaneously executing code and accessing common shared memory...” Col. 10, lines 20-23, “this current pointer...is serving the function of informing the host CPU not to write code into the left buffer since the DSP is still executing this code...” Thus, Lisle provides a technique to reduce the risk of a driver overwriting code that is being executed by another driver (shared memory).

(B) As Applicant has pointed out on page 2 of Remarks, 7th paragraph, in reference to claims 1 and 26, “Kaufman does not include... verifying if a driver has been downloaded by another function.”

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Examiner's Response: Independent claims have been amended to include additional limitations.

New art has been combined to overcome the rejection. See rejection of claims 1 and 26 above. Goldman disclosed (col. 5, lines 17-19), "determine if the file exists in its file-store...returns true if the file exists...", (col. 6, lines 26-32), "it is very common...to share files...some of the files which the parent associated with the first Application will likely be already present...and will not need to be duplicated.", (col. 7, lines 66-67), "A further advantage results from avoiding the installation of duplicate components on targeted devices...", (col. 8, lines 39-41), "present invention enables cross referencing of duplicate or overlapping application components..." Thus Goldman discloses that if two applications reference an identical component, duplication can be avoided by sharing, thus firmware previously downloaded is verified.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Steelman, whose telephone number is (571) 272-3704. The examiner can normally be reached Monday through Thursday, from 7:00 AM to 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached at (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

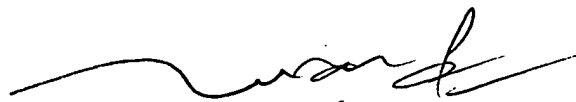
Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mary Steelman



05/03/2005



TUAN DAM
SUPERVISORY PATENT EXAMINER